CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER 78-113

NPDES NO. CA0038580

WASTE DISCHARGE REQUIREMENTS FOR:

CITY OF HERCULES
CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, finds that:

1. The City of Hercules (hereinafter discharger) by application dated December 10, 1977, has applied for waste discharge requirements and a permit to discharge waste under the National Pollutant Discharge Elimination System.

2. The discharger is constructing a 0.35 mgd advanced treatment plant to serve the Hercules area. Following completion of the facility scheduled for May 1979, effluent will be discharged on an interim basis to the collection system of the Pinole treatment plant. Hercules will subsequently discharge to San Pablo Bay via the Pinole to Rodeo force main and joint outfall scheduled for completion in late 1980.

3. The joint outfall will extend 3770 feet northwesterly of the Rodeo sewage treatment plant into San Pablo Bay at a depth of 13 feet (MLLW).

4. The Board adopted the Water Quality Control Plan for the San Francisco Bay Basin on April 8, 1975.

5. The beneficial uses of San Pablo Bay and contiguous water bodies are:

   a. Water contact recreation
   b. Non-contact water recreation
   c. Navigation
   d. Open commercial and sport fishing
   e. Wildlife habitat
   f. Fish spawning and migration
   g. Industrial uses
   h. Preservation of rare and endangered species
   i. Shellfishing

6. Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 208b, 301, 302, 303d, 304, and 307 of the Federal Water Pollution Control Act are applicable to the discharge.

7. The discharger participated in preparation of two environmental impact reports with respect to the treatment and disposal facilities. The first was prepared as a joint environmental impact report and statement (EIR/EIS) by the U.S. EPA and the West County Agency, in which the discharger particapated as a member agency. The document, issued in February 1976 and amended January 1977, analyzed impacts of several alternatives for waste treatment and disposal on the West Contra Costa area including an alternative involving treatment of Hercules wastewater at an expanded Pinole plant and disposal of treated effluent to San Pablo Bay via a joint Pinole-Hercules-Rodeo outfall. The second EIR, dated April 27, 1978, was prepared by the discharger to analyze impacts of treating Hercules' waste in a separate Hercules facility, rather than joint treatment of Pinole as previously planned. The disposal concept of conveyance to the joint outfall was not changed.

8. The treatment and disposal project will have the following significant impacts on the environment as indicated in the EIR's referred to above:

Disposal

a. Elimination of shoreline discharges of municipal effluent which are adversely affecting shellfish growing areas.

b. Continuation of discharge of low concentrations of toxicants to Bay waters which may have long term biotic effects which have not as yet been defined and quantified.

Treatment

a. Production of a higher than secondary quality effluent at the Hercules plant by use of the aqua-culture technology and sand filtration.

b. Prevention of periodic discharges of chlorine which is common to many municipal plants by using ozonation instead of chlorination as disinfection process.

9. With respect to the potential adverse impacts associated with low level toxicant discharges referred to in the EIR, current NPDES permits set limits on the concentrations of metal toxicants chlorinated hydrocarbons discharged. These limits are intended to protect aquatic organisms from adverse effects due to long term exposure. However, further research on biotic effects of toxicants is needed and as more information becomes available, permit limits will be re-evaluated.

10. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the proposed discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

11. The Board in a public meeting heard and considered all comments pertaining to the discharge.

12. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act, or amendments thereto, and shall take effect at the end of ten days from the date of hearing provided the Regional Administrator of the U. S. Environmental Protection Agency has no objections.

IT IS HEREBY ORDERED, the City of Hercules, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and provisions of the Federal Water Pollution Control Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. The discharge of waste into the joint outfall in excess of the following limits is prohibited:

Constituent	Units	30-Day Average	7-Day Average	Daily Maximum
a. Settleable Matter	ml/l-hr	0.1		0.2
b. BOD	mg/l	30	45	60
	lbs/day	87.6		175.2
	kg/day	39.8		87.6
c. Suspended Solids	mg/l	30	45	60
	lbs/day	87.6		175.2
	kg/day	39.8		87.6
d. Oil & Grease	mg/l	10		20
	lbs/day	29.2		58.4
	kg/day	13.3		26.5
e. Chlorine Residual	mg/l			0.0

3. The arithmetic mean of the values for BOD and Suspended Solids effluent samples collected in a period of 30 consecutive days shall not exceed 15 percent of the arithmetic mean of respective values for influent samples collected at approximately the same times, during the same period. (85 percent removal)

3. Representative samples of the effluent shall not exceed the following limits more than the percentage of time indicated:[a]

Constituent	Unit of Measurement	50% of time	10% of time
Arsenic	mg/l (kg/day)	0.01 (0.013)	0.02 (0.04)
Cadmium	mg/l (kg/day)	0.02 (0.026)	0.03 (0.06)
Total Chromium	mg/l (kg/day)	0.005 (0.007)	0.01 (0.02)
Copper	mg/l (kg/day)	0.2 (0.265)	0.3 (0.597)
Lead	mg/l (kg/day)	0.1 (0.133)	0.2 (0.398)
Mercury	mg/l (kg/day)	0.001 (0.001)	0.002 (0.004)
Nickel	mg/l (kg/day)	0.1 (0.133)	0.2 (0.398)
Silver	mg/l (kg/day)	0.02 (0.026)	0.04 (0.08)
Zinc	mg/l (kg/day)	0.3 (0.398)	0.5 (0.995)
Cyanide	mg/l (kg/day)	0.1 (0.133)	0.2 (0.398)
Phenolic Compounds	mg/l (kg/day)	0.5 (0.663)	1.0 (1.990)
Total Identifiable Chlorinated Hydrocarbons	mg/l (kg/day)[b]	0.002 (0.003)	0.004 (0.008)

4. The total coliform bacteria for a median of five consecutive effluent samples shall not exceed 240 per 100 milliliters. Any single sample shall not exceed a most probable number (MPN) of 1100 total coliform bacteria when verified by a repeat sample taken within 48 hours.

5. The discharge shall not have a pH of less than 6.0 nor greater than 9.0.

6. In any representative set of samples the waste as discharged shall meet the following limit of quality:

   Toxicity: The survival of test fishes in 96-hour bioassays of the effluent shall achieve a 90 percentile value of not less than 50% survival for 10 consecutive samples.

B. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in water of the state at any place.

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths;

   c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

[a] These limits are intended to be achieved through secondary treatment, source control and application of pretreatment standards.

[b] Total Identifiable Chlorinated Hydrocarbons shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, polychlorinated biphenyls, and other identifiable chlorinated hydrocarbons.

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a.	Dissolved oxygen	5.0 mg/l minimum. Annual median - 80% saturation. When natural factors cause lesser concentration(s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b.	Dissolved sulfide	0.1 mg/l maximum.
c.	pH	Variation from natural ambient pH by more than 0.2 pH units.
d.	Un-ionized ammonia as N	0.025 mg/l annual median 0.4 mg/l maximum

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

C. Discharge Prohibitions

1. Discharge to the joint outfall to San Pablo Bay shall not commence without written authorization from the Executive Officer. Such authorization will be granted upon a demonstration that the discharger is able to comply with the specifications of this Order.

2. Bypass or overflow of untreated wastewater to waters of the State either at the treatment plant or from the collection system is prohibited.

3. Average dry weather flow shall not exceed .35 mgd as determined over three consecutive months each year.

4. Discharge of waste where it does not receive a minimum initial dilution of 45:1 is prohibited.

D. Provisions

1. Neither the treatment nor the discharge of pollutants shall create a nuisance as defined in the California Water Code.

2. All wastewater ponds and lagoons shall be maintained with a minimum freeboard of one foot.

3. Prior to commencing discharge to the joint outfall the discharger shall submit a contingency plan for continuous operation of facilities as required by Board Resolution No. 74-10.

4. The discharger shall comply with the Self-Monitoring Reporting Program as ordered by the Executive Officer.

5. The discharger shall comply with all items of the attached "Standard Provisions and Reporting Requirements" dated April 1977.

6. This Order becomes effective upon commencement of discharge to the joint outfall and expires November 21, 1983. The discharger must file a Report of Waste Discharge not later than 180 days in advance of such date as an application for issuance of new waste discharge requirements.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 19, 1978.

FRED H. DIERKER
Executive Officer

RKM/tmh
Attachments:
Standard Provisions & Reporting Requirements 4/77
Resolution No. 74-10
Self-Monitoring Program

STATE OF CALIFORNIA
RECTONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

RESOLUTION NO. 74-10

POLICY REGARDING WASTE DISCHARGER'S RESPONSIBILITIES TO DEVELOP AND IMPLEMENT CONTINGENCY PLANS TO ASSURE CONTINUOUS OPERATION OF FACILITIES FOR THE COLLECTION, TREATMENT, AND DISPOSAL OF WASTE

WHEREAS, this Regional Board has adopted policies and requirements stating its intent to protect the beneficial water uses within the San Francisco Bay Region and prohibiting the discharge of untreated or inadequately treated wastes; and

WHEREAS, conditions including process failure, power outage, employee strikes, physical damage caused by earthquakes, fires, vandalism, equipment, and sewer line failures, and strikes by suppliers of chemicals, etc., or maintenance services can result in the discharge of untreated or inadequately treated wastes; and

WHEREAS, the development and implementation of contingency plans for the operation of waste collection, treatment, and disposal facilities under such conditions should insure that facilities remain in, or are rapidly returned to, operation in the event of such an incident and measures are taken to clean up the effects of untreated or inadequately treated wastes.

NOW, THEREFORE BE IT RESOLVED, that this Regional Board will require each discharger as a provision of its NPDES Permit to submit within 120 days after the adoption of the permit a contingency plan acceptable to the Regional Board's Executive Officer to include at least the following:

A. Provision of personnel for continued operation and maintenance of sewerage facilities during employee strikes or strikes against contractors providing services.

B. Maintenance of adequate chemicals or other supplies and spare parts necessary for continued operation of sewerage facilities.

C. Provisions of emergency standby power.

D. Protection against vandalism.

E. Expeditious action to repair failures of or damage to equipment and sewer lines.

F. Report of spills and discharges of untreated or inadequately treated wastes including measures taken to clean up the effects of such discharges.

G. Programs for maintenance replacement and surveillance of physical condition of equipment, facilities, and sewer lines.

STATE OF CALIFORNIA—RESOURCES AGENCY RONALD REAGAN, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
1111 JACKSON STREET, ROOM 6040
OAKLAND 94607

Phone: Area Code 415
464-1255

November 4, 1974

In reply, please refer to
File No. 2390.00(LPK)

ALL WASTE DISCHARGERS

Gentlemen:

Subject: Contingency Plans

The purpose of this letter is to provide guidance to municipal and industrial waste dischargers in the preparation of contingency plans for continuous operation of waste treatment facilities under various kinds of emergency conditions, as called for in Regional Board Resolution 74-10.

A variety of emergency conditions can interfere with normal operation of waste collection and treatment facilities, including natural disasters such as earthquakes; power outages; work stoppages; shortages of necessary chemicals and spare parts; and civil disorders. However, for the purposes of contingency planning the essential needs can be reduced to the following: personnel, chemicals and equipment and power. Plans should recognize that these three necessary elements may be affected singly or in combination.

Personnel

The contingency plan should include provisions for operation of waste treatment facilities when the normal work force is unavailable. Plans for personnel should include the following:

a. Modified operating procedures for waste treatment facilities using alternate or reduced personnel. This may involve deferred maintenance, shutdown of some units and overload of others to simplify operation; reduced effluent monitoring, and the like may be considered, but only as a last resort.

b. Identification of individuals capable of handling necessary tasks in keeping treatment facilities operational if normal personnel are unavailable.

c. Provision for feeding and housing personnel who may be required to work extended hours under emergency conditions, and who may find it necessary to live in the treatment plant. This may involve making funds available for cash purchase of food and other necessary commodities, and fair compensation of personnel for hours worked.

Personnel plans should also consider manpower needs for maintenance of the collection system. Provision should be made for removal of line blockages and maintenance of pump stations.

Another problem to be addressed in personnel plans is strikes against contractors supplying goods and services related to the treatment process or involved in construction activities. Where appropriate, contractors should have a separate gate, to avoid a situation in which treatment plant personnel would have to cross a picket line to enter the plant.

Chemicals and Equipment

Chlorine and chemicals used for dechlorination are the chemicals of primary concern in municipal waste treatment facilities. A variety of chemicals are used in industrial waste treatment including caustics, acids, lime and polymers. Contingency plans for necessary chemicals should include plans for purchase and transportation of chemicals if primary suppliers and haulers are unavailable.

Consideration should be given to substitution of chemicals where feasible, such as using polymers instead of lime or hypochlorites instead of a liquid chlorine. Where feasible, arrangements should be made for borrowing chemicals from other plants.

Planning for equipment should be directed towards keeping all treatment units in operable condition. This should involve the following:

a. Plans for maintenance of treatment units. The Board realizes that virtually all treatment plants have detailed maintenance plans, and these need only be summarized.

b. Plans for spare parts. This would involve identification of parts which are needed frequently, such as chains and sprockets, and making provisions for their prompt replacement when necessary. Such provisions could involve maintenance of a predetermined spare parts inventory, identification of suppliers and inventories on hand with suppliers, and identification of other plants having identical treatment units from whom spare parts could be borrowed as a last resort.

c. Protection against vandalism of treatment facilities and the collection system, including pump station. Such protection could include surveillance, locks and fences, and good lighting.

Power Supply

The analysis and need for standby power should consider the historic experience with outages of normal power supplies and the impact that these outages had on waste collection and treatment.

Contingency plans for power should include both collection and treatment facilities. For the collection system, provision should be made for operation of pump stations during power outages. This may be accomplished by arranging for availability of portable generators.

For treatment facilities an analysis should be made of the primary power supply and transmission system, to identify possible points of breakdown. Backup systems for power supply and transmission should be identified. Such systems could include portable or stationary generators. If backup systems cannot supply all power needs, plans should be made to achieve optimal performance using the power available.

Additional Measures

Contingency plans should address the possibility of wastes being discharged either untreated or without adequate treatment. Planning for this should include measures to minimize impact on receiving waters whenever possible. This could include plans for release of effluent at favorable times in the tidal cycles.

Plans should also include prompt notification of the Regional Board in the event inadequately treated wastes are discharged.

Please call Dr. Larry Kolb or Roger James if you have any questions.

Sincerely,

FRED H. DIERKER
Executive Officer

FHD/daw

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

City of Hercules

Contra Costa County

NPDES NO. CA 0038580

ORDER NO. 78-113

CONSISTS OF

PART A , January 1978

AND

PART B

Date Ordered December 19, 1978

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Station	Description
A-1	At any point in the City of Hercules treatment facilities headworks at which all waste tributary to the system is present and preceding any phase of treatment.

B. EFFLUENT

Station	Description
E-001	At any point in discharge to the joint outfall between the point of such discharge and the point at which all waste tributary to that outfall is present. (May be the same as E-001-D)
E-001-D	At any point in the disinfection facilities for Waste E-001, at which point adequate contact with the disinfectant is assured.

C. RECEIVING WATERS

Station	Description
C-1	At a point in San Pablo Bay, located directly above the center of the diffuser.
C-2-N C-2-S C-2-E C-2-W	At a point in San Pablo Bay, located 50 feet north, south, east and west, respectively, of center of the diffuser.

D. LAND OBSERVATIONS

Station	Description
P-1 thru P-'n'	Located at the corners and midpoints of the perimeter fenceline surrounding the treatment facilities. (A sketch showing the locations of these stations will accompany each report.)

E. OVERFLOWS AND BYPASSES

Station	Description
O-1 thru O-'n'	Bypass or overflows from manholes, pump stations or collection system.
	Note: Initial SMP report to include map and description of, each known bypass or overflow location.

Reporting - Shall be submitted monthly and include date, time and period of each overflow or bypass.

II. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling, and analysis shall be that given as Table I.

III. MODIFICATION OF PART A

The following paragraphs of Part A do not apply: C.3, C.4, C.5.d.4.

I, Fred H. Dierker, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 78-113.

2. Has been ordered by the Executive Officer on December 19, 1978. and shall become effective as follows:

   Upon initiation of operation, standard observations shall be made and reported according to this self-monitoring program. Prior to discharge to surface water, 6 months operating data during both dry and wet weather periods shall be obtained and reported according to this self-monitoring program. Upon commencement of discharge, receiving water monitoring shall be initiated.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer.

FRED H. DIERKER
Executive Officer

Date Ordered December 19, 1978

Attachment:
Table I

TABLE I

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A	E-001			E-001-D		All Sta C	All Sta P	B	All Sta O			
TYPE OF SAMPLE	C-24	G	C-24	Cont.	G	C-24	G	O	BS	O			
Flow Rate (mgd)	D			D									
BOD, 5-day, 20° C, (mg/l & kg/day; % removal)	5/W		5/W										
Chlorine Residual & Dosage (mg/l & kg/day)		2H (1)			(1) 2H								
Settleable Matter (ml/1-hr. & cu. ft./day)		D											
Total Suspended Matter (mg/l & kg/day)	5/W		5/W										
Oil & Grease (mg/l & kg/day)	2/W		2/W										
Coliform (Total or Fecal) (MPN/100 ml) per req't					D		M						
Fish Toxicity, 96-hr. TL_{50} % Survival in undiluted waste						M							
Ammonia Nitrogen (mg/l & kg/day)			W				2/Y						
Nitrate Nitrogen (mg/l & kg/day)			W				2/Y						
Nitrite Nitrogen (mg/l & kg/day)			W				2/Y						
Total Organic Nitrogen (mg/l & kg/day)			W				2/Y						
Total Phosphate (mg/l & kg/day)			W				2/Y						
Turbidity (Jackson Turbidity Units)			2W				M						
pH (units)		D					M						
Dissolved Oxygen (mg/l and % Saturation)		D					M						
Temperature (°C)		D					M						
Apparent Color (color units)													
Secchi Disc (inches)													
Sulfides (if DO < 5.0 mg/l) Total & Dissolved (mg/l)		2/W					M						
Arsenic (mg/l & kg/day)			3M										
Cadmium (mg/l & kg/day)			3M										
Chromium, Total (mg/l & kg/day)			3M										
Copper (mg/l & kg/day)			3M										
Cyanide (mg/l & kg/day)			3M										
Silver (mg/l & kg/day			3M										
Lead (mg/l & kg/day)			3M										

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A	E-001			E-001-D		All Sta C	All Sta P	B	All Sta O			
TYPE OF SAMPLE	C-24	G	C-24	Cont	G	C-24	G	O	BS	O			
Mercury (mg/l & kg/day)			3M										
Nickel (mg/l & kg/day)			3M										
Zinc (mg/l & kg/day)			3M										
PHENOLIC COMPOUNDS (mg/l & kg/day)			3M										
All Applicable Standard Observations		D					M	W(2)		E			
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)			3M										
Absorbed ozone dosage (mg/l & kg/day)					cont or	2H							
Ozone Residual					2/D								

FOOTNOTES:

(1) In the event of ozone system failure, chlorine residual shall be monitored every 2 hours; dosage shall be reported in lbs/day.

(2) Observations C.5.d and C.5.e of Part A should be reported.

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
C-X = composite sample - X hours (used when discharge does not continue for 24-hour period)
Cont = continuous sampling
DI = depth-integrated sample
BS = bottom sediment sample
O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
A = treatment facility influent stations
E = waste effluent stations
C = receiving water stations
P = treatment facilities perimeter stations
L = basin and/or pond levee stations
B = bottom sediment stations
G = groundwater stations

FREQUENCY OF SAMPLING

E = each occurence
H = once each hour
D = once each day
W = once each week
M = once each month
Y = once each year

2/H = twice per hour
2/W = 2 days per week
5/W = 5 days per week
2/M = 2 days per month
2/Y = once in March and once in September
Q = quarterly, once in March, June, Sept. and December

2H = every 2 hours
2D = every 2 days
2W = every 2 weeks
3M = every 3 months
Cont = continuous